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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,997

02/16/2006

Kazuhiko Honda

52433/837

1770

26646 7590 04/20/2009

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EXAMINER

ZHU, WEIPING

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

04/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,997	Applicant(s) HONDA ET AL.	
	Examiner WEIPING ZHU	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/16/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/16/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

The application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted

I. Claims 1-3, drawn to a process of production of a high strength galvanized steel sheet;

II. Claim 4, drawn to a manufacturing equipment of hot-dip galvanized steel sheet; and

III. Claim 5, drawn to a system for production of a high strength galvanized steel sheet.

The inventions listed as I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature in all groups is the high strength galvanized steel sheet. This element cannot be a special technical feature under PCT Rules 13.2 because the element is shown in the prior art. JP 2001-279412 A discloses a high strength galvanized steel sheet, which is substantially identical to the claimed high strength galvanized steel sheet. Inventions I-III lack the same or corresponding special technical features. Therefore unity of invention is lacking and restriction is appropriate.

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During a telephone conversation with Mr. John J. Kelly on March 13, 2009 a provisional election was made with traverse to prosecute the invention of I, claims 1-3. Affirmation of this election must be made by the applicant in replying to this Office action. Claims 4 and 5 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Should the applicant traverse on the ground that the inventions are not patentably distinct, the applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103 (a) of the other invention.

The applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP ('412 A) in view of Nitto et al. (US 4,437,905).

With respect to claim 1, JP ('412 A) discloses a process for producing a high strength galvanized steel sheet comprising hot-dip galvanizing a high strength steel sheet having by weight 0.4-2.0% of Si (abstract and claim 1) in an atmosphere in a reducing zone containing by weight 1-70% of hydrogen and the balance comprising N₂ and H₂O; controlling in the atmosphere the log (PH₂O/PH₂) of the water partial pressure and hydrogen partial pressure to log (PH₂O/PH₂) ≤ -0.8 (paragraphs [0022]-[0023], machine translation); annealing the steel sheet; cooling the steel sheet by a plating bath; and heating for alloying the steel sheet at 460-550°C (paragraphs [0029]-[0032], machine translation). JP ('412 A) does not specify the atmosphere comprises O₂, CO₂ and CO as claimed. Nitto et al. ('905) discloses the presences of these gases in a continuous annealing atmosphere (col. 7, lines 1-45). It would have been obvious to one of ordinary skill in the art that these gases would be present in the atmosphere of JP ('412 A), because the processes of annealing of JP ('412 A) and Nitto et al. ('905) are similar. JP ('412 A) does not disclose controlling log (PCO₂/PH₂) and log (P_T/PH₂)

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as claimed. However, it has been held that discovering an optimum value of a result-effective variable involves only routine skill in the art; see *In re Boesch*, 617, F.2d 272, 205 USPQ 215 (CCPA 1980). In the instant case, the partial pressures of H_2 , H_2O , CO_2 and CO are result effective variables, because they would directly affect the intensities of the oxidation and reduction of the steel sheet as disclosed by Nitto et al. ('905) (col. 7, line 1 to col. 8, line 6). The claimed total pressure would be a result-effective variable too because it is the sum of the partial pressures of H_2O and CO_2 . It would have been obvious to one skilled in the art to have optimized the $\log(P_{CO_2}/P_{H_2})$ and $\log(P_T/P_{H_2})$ in the reducing zone of JP ('412 A) in order to achieve desired intensities of the oxidation and reduction of the steel sheet as disclosed by Nitto et al. ('905) (col. 8, lines 3-6). JP ('412 A) does not specify the annealing temperature as claimed. Nitto et al. ('905) discloses an annealing temperature of from $700^\circ C$ to the Ac_3 point (abstract), which overlaps the claimed temperature range.

With respect to claims 2 and 3, JP ('412 A) discloses that the plating bath contains 0.05-0.25 Al (paragraph [0024], machine translation), which overlaps the Al content in the plating bath as claimed in claims 2 and 3. The alloying temperature of JP ('412 A) would obviously satisfy the claimed formula because both the alloying temperature and the Al content as disclosed by JP ('412 A) overlap the claimed alloying temperature and the Al content respectively.

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Conclusion

3. This Office action is made non-final. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Wyszomierski/
Primary Examiner
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WZ
3/23/2009